REMARKS

In the latest Office Action, the Examiner maintained the rejection of claims 9-12 under 35 USC §103 as being unpatentable over Burns et al (Principles of Electronic Circuits) in view of "applicant's admitted prior art" with Henley et al. In response to Applicant's previous argument that Henley et al. do not teach or suggest treating the surface of a silicon dioxide substrate for the purpose of providing a subsequent layer of polycrystalline silicon having a smooth morphology, the Examiner asserts that "Henley et al. was not relied upon to teach this combination of limitations, but merely to teach an alternate ion implantation method than that of the admitted prior art." The Examiner asserts that he has relied on the "admitted prior art" as teaching a surface treatment, maintaining that it would have been obvious to combine the "admitted prior art" with Henley et al. "to alleviate the metal contamination."

However, in making this assumption, the Examiner has continued to ignore the fact that there is no teaching or suggestion in Henley et al. that their technique is **applicable** to treat the surface of a silicon dioxide layer, nor is there any suggestion in Henley et al. that if applied to the surface of a silicon dioxide layer, their treatment would successfully result in a silicon dioxide layer which is free of metal contaminants as claimed. In order to establish a *prima facie* case of obviousness, there must be some objective teaching in the prior art that would lead one to combine the relevant teachings of the references. MPEP §2142. "'Conclusory statements of general advantages' of prior art and 'convenient assumptions' about the knowledge of skilled artisans are insufficient to establish a prima facie case that the invention in a patent application is obvious." See *In re Bruce Beasley*, 2004 U.S. App. LEXIS 25055 (Fed. Cir. 2004). The fact that Henley teaches that, "in some instances," their treatment produces less metal contamination than other ion implantation techniques does not provide motivation for one to substitute Henley's technique as a surface treatment in the absence of some suggestion from the prior art to do so.

Without the benefit of applicants' specification, it is not understood how Henley's teaching of implanting ions beneath the surface of a silicon wafer would lead one to implant such ions on the surface of a silicon dioxide layer for the purpose of providing a smooth morphology for a layer of polycrystalline silicon formed on the silicon dioxide

layer. The Examiner has failed to carry his evidentiary burden to establish a prima facie case.

Claim 14 stands rejected under 35 USC §103 as being unpatentable over Murata et al. (U.S. Patent No. 5,576,229) in view of "Applicant's admitted prior art" with Henley et al. The Examiner maintains that it would have been obvious to implant hydrogen ions into the glass substrate of Murata et al. based on the teachings of "applicant's admitted prior art" and Henley et al. For the same reasons discussed above, there is clearly no motivation to combine the teachings of the references. Henley et al. do not teach or suggest implanting hydrogen ions onto the surface of a semiconductor substrate, and there is no teaching or suggestion in either Henley et al. or the "admitted prior art" which would lead one skilled in the art to use Henley's PSII method on the surface of a silicon dioxide layer for the claimed purpose.

For all of the reasons stated above, applicant submits that claims 9-12 and 14 are patentable over the prior art of record. Early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,
DINSMORE & SHOHL LLP

By Susan M. Luna
Susan M. Luna
Registration No. 38,769

One Dayton Centre
One South Main Street, Suite 1300
Dayton, Ohio 45402-2023
(937) 449-6429
Facsimile: (937) 449-6405